CLAIMS

1. A display apparatus comprising plural pixel electrodes arranged in a matrix, a switching element connected with a pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode forming a capacitance with the pixel electrode, further comprising

a storage capacitance between the pixel electrode and the scanning electrode excluding the scanning electrode of the present line;

more than two capacitance elements connected with the pixel electrode, wherein at least one of a gate-drain inter-electrode capacitance of the switching element and the storage capacitance are included, have a different value according to the distance from a power feeding edge of the scanning electrode;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst, a first capacitance ratio α gd shown by (Expression 56) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode.

(Expression 56)

α gd $=$ Cgd $/$ Ctot

2. The display apparatus according to claim 1, wherein, both the gate-drain inter-electrode capacitance and the storage capacitance increase according to the distance from the power feeding edge of the scanning electrode.

3. The display apparatus according to claim 1, wherein, both the gate-drain inter-electrode capacitance and the storage capacitance decrease according to the distance from the power feeding edge of the scanning electrode.

4. The display apparatus according to claim 1, wherein, both the storage capacitance and a capacitance formed between the opposite electrode and the pixel electrode decrease according to the distance from the power feeding edge of the scanning electrode.

5. The display apparatus according to any one of claim 1 to claim 4, wherein each capacitance element of the pixel is set so a second capacitance ratio α st shown by (Expression 57) is substantially constant.

(Expression 57)

α st $=$ Cst $/$ Ctot

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6. The display apparatus according to any one of claim 1 to claim 4, wherein each capacitance element of the pixel is set so a the second capacitance ratio αst shown by (Expression 58) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode.

5   (Expression 58)

$$\alpha st = Cst / Ctot$$

7. The display apparatus according to any one of claim 1 to claim 4, wherein the display medium is a liquid crystal.

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8. The display apparatus according to any one of claim 1 to claim 4, further comprising a means for overlapping a voltage to the driving circuit of the scanning signal via the storage capacitance.

15   9. The display apparatus according to claim 8, wherein the driving circuit of the scanning signal comprising an output voltage of more than four values.

10. The display apparatus according to claim 8, wherein the voltage via the storage capacitance is applied to the pixel electrode after applying the voltage via the switching
20   element.

11. A display apparatus comprising plural pixel electrodes arranged in a matrix, a switching element connected with a pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode forming a capacitance between the pixel electrode, a storage capacitance
25   electrode, and further comprising

a first storage capacitance between the pixel electrode and the scanning electrode excluding the scanning electrode of the present line; and

a second storage capacitance between the pixel electrode and the storage capacitance electrode.
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12. The display apparatus according to claim 11, wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the first storage capacitance id denoted as Cst1, and a second storage capacitance is denoted as Cst2,

35   the third capacitance ratio $\alpha gd1$ shown by (Expression 59) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode.

(Expression 59)

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$$\alpha gd1 = Cgd / Ctot$$

13. The display apparatus according to claim 12, wherein the gate-drain inter-electrode capacitance increases according to the distance from the power feeding edge of the scanning

5   electrode.

14. The display apparatus according to claim 12, wherein, more than two capacitance elements connected with the pixel electrode, including at least one of a gate-drain inter-electrode capacitance, the first storage capacitance, the second storage capacitance, have

10   different value according to the distance from the power feeding edge of the scanning electrode.

15. The display apparatus according to claim 14, wherein both the gate-drain inter-electrode capacitance and the first storage capacitance increase according to the distance from the

15   power feeding edge of the scanning electrode.

16. The display apparatus according to claim 14, wherein the gate-drain inter-electrode capacitance increases according to the distance from the power feeding edge of the scanning electrode and the second storage capacitance decreases according to the distance from the

20   power feeding edge of the scanning electrode.

17. The display apparatus according to claim 14, wherein both the first storage capacitance and the second storage capacitance decrease according to the distance from the power feeding edge of the scanning electrode.

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18. The display apparatus according to claim 17, wherein, the capacitance ratio $Cst1 / Cst2$ is substantially constant.

19. The display apparatus according to any one of claim 11 to claim 17, wherein each

30   capacitance element of the pixel is set as the fourth capacitance ratio $\alpha st1$ shown by (Expression 60) is substantially constant.
    (Expression 60)
    $\alpha st1 = Cst1 / Ctot$

35   20. The display apparatus according to any one of claim 11 to claim 17, wherein each capacitance element of the pixel is set so the fourth capacitance ratio $\alpha st1$ shown by (Expression 61) increases continuously or in stages according to the distance from the power

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feeding edge of the scanning electrode.

(Expression 61)

$$\alpha st1 = Cst1 / Ctot$$

5   21. The display apparatus according to any one of claim 11 to claim 17, wherein a parallel monotonic capacitance is not formed between the pixel electrode and the opposite electrode via the display medium.

22. The display apparatus according to claim 21, wherein the opposite electrode is formed on
10   the substrate on which the pixel electrode is formed.

23. The display apparatus according to claim 21, wherein the opposite electrode is not formed on the substrate on which the pixel electrode is formed, and the display medium is controlled by an electric field that is substantially parallel to the substrate and an electric field that has
15   skew relative to the substrate.

24. The display apparatus according to claim 21, wherein the opposite electrodes are formed both on the substrate having the pixel electrode and the substrate opposing said substrate, and the display medium is controlled by an electric field that is substantially parallel to the
20   substrate and an electric field that has skew relative to the substrate.

25. The display apparatus according to claim 23, wherein the display medium is a liquid crystal.

25   26. The display apparatus according to claim 24, wherein the display medium is a liquid crystal.

27. The display apparatus according to any one of claim 11 to claim 17, further comprising a means for overlapping a voltage to the driving circuit of the scanning signal via the storage
30   capacitance.

28. The display apparatus according to claim 27, wherein the driving circuit of the scanning signal comprises an output voltage of more than four values.

35   29. The display apparatus according to claim 27, wherein the voltage is applied to the pixel electrode via the storage capacitance after applying the voltage via the switching element.

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30. A display apparatus comprising plural pixel electrodes arranged in a matrix, a switching element connected with a pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, and further comprising

5   a storage capacitance between the pixel electrode and the scanning electrode excluding the scanning electrode of the present line;

wherein, there are plural scanning electrodes connected with one edge of the storage capacitances whose other edges are connected with the pixel electrode of plural pixels belonging to one of the scanning electrodes;

wherein, when all capacitance connected with the pixel electrode in a pixel is
10   denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

both the first capacitance ratio αgd shown by (Expression 62) and the second capacitance ratio αst shown by (Expression 63) have a different value according to the scanning electrode to which the storage capacitance is connected.

15   (Expression 62)

αgd$=$Cgd$\diagup$Ctot

(Expression 63)

αst$=$Cst$\diagup$Ctot

20   31. The display apparatus according to claim 30, further comprising a picture signal drive circuit applying two picture signals having different polarity each other to the plural picture signal electrodes.

32. The display apparatus according to claim 31, wherein, among plural pixels belonging to a
25   scanning electrode (scanning electrode "0"),

a scanning electrode connected with one edge of a storage capacitance wherein the other edge is connected with a pixel electrode of a pixel belonging to the picture signal electrode that applies a picture signal of the first polarity is a common scanning electrode (it is called as scanning electrode A),

30   a scanning electrode connected with one edge of a storage capacitance wherein the other edge is connected with a pixel electrode of a pixel belonging to the picture signal electrode that applies a picture signal of the second polarity is also a common scanning electrode (it is called as scanning electrode B),

wherein the scanning electrode A and the scanning electrode B are different.
35

33. The display apparatus according to claim 32, wherein the scanning electrode A is located as the preceding line of the scanning electrode 0, and the scanning electrode B is located as

the next line of the scanning electrode 0.

34. The display apparatus according to claim 33, wherein αgd and αst of the pixel whose storage capacitance is connected with the scanning electrode of the preceding line are represented as αgd(P) and αst(P), αgd and αst of the pixel whose storage capacitance is connected with the scanning electrode of the next line are represented as αgd(Q) and αst(Q), and (Expression 64) is satisfied.

(Expression 64)

αst(P) $<$ αst(Q)

35. The display apparatus according to claim 34, further comprising a scanning signal drive circuit applying a voltage signal to a plural scanning electrodes, wherein the scanning signal drive circuit comprises an output voltage of more than four values.

36. The display apparatus according to claim 35, wherein when the scanning electrode 0 is selected, the voltage of the scanning electrode 0 becomes the first voltage level Vgon, the scanning electrode A and the scanning electrode B become the second voltage level Vge(+) and the third voltage level Vge(-) respectively, and during the holding period when the scanning electrode 0 is not selected, the voltage of the scanning electrode 0 becomes the fourth voltage level Vgoff, and (Expression 65) is satisfied.

(Expression 65)

β(P) $<$ β(Q)

wherein,

β(P)$=$ αst(P)(ΔVgec$\diagup$$\Delta$Vgon)$+$ αgd(P)

β(Q)$=$ αst(Q)(ΔVgec$\diagup$$\Delta$Vgon)$+$ αgd(Q)

ΔVgec$=$(Vge(+)$+$Vge(-))$\diagup$ 2 $-$Vgoff

ΔVgon$=$Vgon$-$Vgoff

37. A display apparatus comprising plural pixel electrodes arranged in a matrix, a switching element connected with a pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, and further comprising,

a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

the second capacitance ratio αst$=$ Cst$\diagup$Ctot shown by (Expression 66) varies

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according to the distance from the display edge of the scanning electrode.

(Expression 66)

$$\alpha \, st = Cst / Ctot$$

5   38. The display apparatus according to claim 37, wherein the second capacitance ratio $\alpha \, st$ increases continuously or in stages according to the distance from the display edge of the scanning electrode.

39. The display apparatus according to claim 38, further comprising a scanning signal drive
10   circuit applying a voltage signal to plural scanning electrodes, wherein the scanning signal drive circuit comprises an output voltage of more than four values.

40. The display apparatus according to claim 39, wherein when a scanning electrode (it is called as scanning electrode 0) is selected, the voltage of the scanning electrode 0 becomes
15   the first voltage level Vgon, the voltage of a scanning electrode (it is called as scanning electrode A), which is connected with one edge of a storage capacitance wherein the other edge is connected with a pixel electrode of plural pixels belonging to the scanning electrode, becomes the second voltage level Vge(+) and the third voltage level Vge(-) according to the displaying period, and during holding period when the scanning electrode 0 is not selected,
20   the voltage of the scanning electrode 0 becomes the fourth voltage level Vgoff, and β shown by (Expression 67) increases continuously or in stages according to the distance from the display edge of the scanning electrode.

(Expression 67)

$$\beta = \alpha \, st(\Delta Vgec / \Delta Vgon) + \alpha \, gd$$

25   herein

$$\Delta Vgec = (Vge(+) + Vge(-)) / 2 - Vgoff$$

$$\Delta Vgon = Vgon - Vgoff$$

41. The display apparatus according to claim 40, wherein when the values of $\alpha \, st$ and β of
30   the scanning electrode at the display edge are represented as $\alpha \, st(0)$ and $\beta \, (0)$, the values of $\alpha \, st - \alpha \, st(0)$ and $\beta - \beta \, (0)$ are substantially proportional to the second power of the distance from the display edge of the scanning electrode.

42. A display apparatus comprising a pixel electrode arranged in a matrix, a switching
35   element connected with the pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, and further comprising

        a storage capacitance between the pixel electrode and the scanning electrode

excluding the scanning electrode of the present line;

wherein, there are plural scanning electrodes connected with one edge of the storage capacitances whose other edges are connected with the pixel electrode of plural pixels belonging to one of the scanning electrode;

5 wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

both the first capacitance ratio α gd shown by (Expression 68) and the second capacitance ratio α st shown by (Expression 69) are a different value according to the

10 scanning electrode to which the storage capacitance is connected, and are varied according to the distance from display edge of the scanning electrode.

(Expression 68)

α gd$=$Cgd$\diagup$Ctot

(Expression 69)

15 α st$=$Cst$\diagup$Ctot

43. The display apparatus according to claim 42, further comprising a picture signal drive circuit applying two kinds of picture signals having different polarity from each other to the plural picture signal electrodes at the same time.

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44. The display apparatus according to claim 42, wherein, among plural pixels belonging to a scanning electrode (scanning electrode "0"),

a scanning electrode, which is connected with one edge of a storage capacitance wherein the other edge is connected with a pixel electrode of a pixel belonging to the picture

25 signal electrode which applies picture signal of the first polarity, is a common scanning electrode (it is called as scanning electrode A),

a scanning electrode, which is connected with one edge of a storage capacitance wherein the other edge is connected with a pixel electrode of a pixel belonging to the picture signal electrode which applies picture signal of the second polarity, is also a common

30 scanning electrode (it is called as scanning electrode B), and

the scanning electrode A and the scanning electrode B are different.

45. The display apparatus according to claim 44, wherein the scanning electrode A is located at the preceding line of the scanning electrode 0, and the scanning electrode B is located as

35 the next line of the scanning electrode 0.

46. The display apparatus according to claim 45, wherein α gd and α st of the pixel whose

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storage capacitance is connected with the scanning electrode of the preceding line are represented as α gd(P) and α st(P), and α gd and α st of the pixel whose storage capacitance is connected with the scanning electrode of the next line are represented as α gd(Q) and α st(Q), and (Expression 70) is satisfied.

5   (Expression 70)

α st(P)$<$ α st(Q)

47. The display apparatus according to claim 46, further comprising a scanning signal drive circuit applying a voltage signal to a plural scanning electrodes, wherein the scanning signal

10   drive circuit comprises an output voltage of more than four values.

48. The display apparatus according to claim 47, wherein when the scanning electrode 0 is selected, the voltage of the scanning electrode 0 becomes the first voltage level Vgon, the scanning electrode A and the scanning electrode B become the second voltage level Vge(+)

15   and the third voltage level Vge(-) respectively, and during the holding period when the scanning electrode 0 is not selected, the voltage of the scanning electrode 0 becomes the fourth voltage level Vgoff, and (Expression 71) is satisfied.

(Expression 71)

β (P)$<$ β (Q)

20   wherein

β (P)$=$ α st(P)(Δ Vgec$\diagup$ Δ Vgon)$+$ α gd(P)

β (Q)$=$ α st(Q)(Δ Vgec$\diagup$ Δ Vgon)$+$ α gd(Q)

Δ Vgec$=$(Vge(+)$+$ Vge(-))$\diagup$ 2 $-$Vgoff

Δ Vgon$=$Vgon$-$Vgoff

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49. The display apparatus according to claim 48, wherein [α st(P)$+$ α st(Q)]$\diagup$2 varies continuously or in stages according to the distance from the display edge of the scanning electrode.

30   50. The display apparatus according to claim 49, wherein when β (P) and β (Q) are shown by (Expression 72), [β (P)$+$ β (Q)]$\diagup$2 increases continuously or in stages according to the distance from the display edge of the scanning electrode.

(Expression 72)

β $=$ α st(Δ Vgec$\diagup$ Δ Vgon)$+$ α gd

35   wherein

Δ Vgec$=$(Vge(+)$+$ Vge(-))$\diagup$ 2 $-$Vgoff

Δ Vgon$=$Vgon$-$Vgoff

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51. The display apparatus according to claim 50, wherein when values of $\alpha\,st(P)$, $\alpha\,st(Q)$, $\beta\,(P)$ and $\beta\,(Q)$ at the display edge of the scanning electrode are described as $\alpha\,st(P,0)$, $\alpha\,st(Q,0)$, $\beta\,(P,0)$ and $\beta\,(Q,0)$, the values of $[\,\alpha\,st(P)-\alpha\,st(P,0)+\alpha\,st(Q)-\alpha\,st(Q,0)]\diagup 2$

5 and $[\,\beta\,(P)-\beta\,(P,0)+\beta\,(Q)-\beta\,(Q,0)]\diagup 2$ are substantially proportional to the second power of the distance from the display edge of the scanning electrode.

52. The display apparatus according to claim 47, wherein the voltage is applied via the storage capacitance to the pixel electrode after applying the voltage via the switching

10 element.

53. The display apparatus according to any one of claim 30 to 52, wherein the display medium is a liquid crystal.

15 54. A display apparatus comprising a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection of the source wiring and the gate wiring; a pixel electrode connected with the thin-film-transistor; a storage capacitance electrode forming a storage capacitance with the pixel electrode; an opposite electrode formed to oppose the pixel electrode on the same substrate or on an other substrate; a gate

20 drive circuit supplying a gate pulse to the gate wiring sequentially; and a source drive circuit supplying a source signal to the source wiring, on the opposing surface of one substrate among two substrates which are opposed each other,

wherein the storage capacitance decreases according to the distance from the feeding edge of the gate signal and the thin-film-transistor becomes small according to the

25 decrease of the storage capacitance.

55. A display apparatus comprising a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection of the source wiring and the gate wiring; a pixel electrode connected with the TFT; a storage capacitance electrode

30 forming a storage capacitance with the pixel electrode; an opposite electrode formed to oppose the pixel electrode on the same substrate or on an other substrate; a gate drive circuit supplying a gate pulse to the gate wiring sequentially; and a source drive circuit supplying a source signal to the source wiring, on the opposing surface of one substrate among two substrates which are opposed each other,

35 wherein the thin-film-transistor is composed of a gate electrode connected with the gate wiring, a source electrode connected with the source wiring and a drain electrode connected with the pixel electrode, and the source electrode and the drain electrode are

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separated by channel-length L with width W, and the storage capacitance electrode becomes small according to the distance from the feeding edge of the gate signal, and

the width W of the channel of the drain electrode of the thin-film-transistor is reduced according to the decrease of the area of the storage capacitance electrode, and the

5   electrostatic capacitance formed by overlapping of the gate and the drain becomes constant.

56. The display apparatus according to any one of claims 54 and 55, wherein the gate pulse is applied to more than two gate wirings at the same time.

10   57. The display apparatus according to claim 56, wherein the gate pulse is applied to more than two continuous gate wirings at the same time.

58. A display apparatus comprising a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection of the source wiring and the

15   gate wiring; a pixel electrode connected with the TFT; a storage capacitance electrode forming a storage capacitance between the pixel electrode; an opposite electrode formed as opposing the pixel electrode on the same substrate or on an other substrate,

wherein the thin-film-transistor is composed of a gate electrode connected with the gate wiring, a source electrode connected with the source wiring and a drain electrode

20   connected with the pixel electrode, and the source electrode and the drain electrode are separated by channel-length L with width W, and the storage capacitance electrode becomes small according to the distance from the feeding edge of the gate signal,

wherein the electrostatic capacitance between the gate electrode and the drain electrode becomes large according to the decrease in the storage capacitance.

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59. The display apparatus according to claim 58, wherein when the storage capacitance is denoted as Cst, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the electrostatic capacitance between the drain electrode and the opposite electrode is denoted as Clc, the value Cst+Cgd+Clc becomes substantially constant.

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60. The display apparatus according to any one of claims 1 to 4, 11 to 18, 30 to 52, 54 to 55 and 58 to 59, further comprising a second switching element wherein the pixel electrode combines a gate electrode of the second switching element or the pixel electrode is connected with a gate electrode of the second switching element.

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61. The display apparatus according to claim 5, further comprising a second switching element wherein the pixel electrode combines a gate electrode of the second switching

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element or the pixel electrode is connected with a gate electrode of the second switching element.

62. The display apparatus according to claim 6, further comprising a second switching element wherein the pixel electrode combines a gate electrode of the second switching element or the pixel electrode is connected with a gate electrode of the second switching element.

63. The display apparatus according to claim 19, further comprising a second switching element wherein the pixel electrode combines a gate electrode of the second switching element or the pixel electrode is connected with a gate electrode of the second switching element.

64. The display apparatus according to claim 20, further comprising a second switching element wherein the pixel electrode combines a gate electrode of the second switching element or the pixel electrode is connected with a gate electrode of the second switching element.

65. A display device comprising plural pixel electrodes arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode forming a capacitance with the pixel electrode, and further comprising

a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

more than two capacitance elements connected with the pixel electrode, including at least one of a gate-drain inter-electrode capacitance of the switching element and the storage capacitance, having different values according to the distance from the power feeding edge of the scanning electrode;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst, a first capacitance ratio αgd shown by (Expression 73) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode.

(Expression 73)

αgd＝Cgd／Ctot

66. A display device comprising plural pixel electrodes arranged in a matrix, a switching element connected with a pixel electrode, a scanning electrode, a picture signal electrode, an

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opposite electrode forming a capacitance with the pixel electrode, a storage capacitance electrode, and further comprising

a first storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line; and

5 a second storage capacitance between the pixel electrode and the storage capacitance electrode.

67. The display device according to claim 66, wherein when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of 10 the switching element is denoted as Cgd, the first storage capacitance is denoted as Cst1, a second storage capacitance is denoted as Cst2,

the third capacitance ratio $\alpha gd1$ shown by (Expression 74) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode.

(Expression 74)

15 $\alpha gd1 = Cgd / Ctot$

68. A display device comprising plural pixel electrodes arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, and further comprising

20 a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

wherein, there are plural scanning electrodes connected with one edge of the storage capacitances whose other edges are connected with the pixel electrode of plural pixels belonging to one of the scanning electrodes;

25 wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

both the first capacitance ratio αgd shown by (Expression 75) and the second capacitance ratio αst shown by (Expression 76) have a different value according to the 30 scanning electrode to which the storage capacitance is connected.

(Expression 75)

$\alpha gd = Cgd / Ctot$

(Expression 76)

$\alpha st = Cst / Ctot$

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69. A display device comprising plural pixel electrodes arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode,

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an opposite electrode, and further comprising,

a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

the second capacitance ratio $\alpha st = Cst / Ctot$ shown by (Expression 77) varies according to the distance from the display edge of the scanning electrode.

(Expression 77)

$$\alpha st = Cst / Ctot$$

70. A display device comprising a pixel electrode arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, and further comprising

a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

wherein, there are plural scanning electrodes connected with one edge of the storage capacitances whose other edges are connected with the pixel electrode of plural pixels belonging to one of the scanning electrodes;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

both the first capacitance ratio αgd shown by (Expression 78) and the second capacitance ratio αst shown by (Expression 79) have a different value according to the scanning electrode to which the storage capacitance is connected, and are varied according to the distance from display edge of the scanning electrode.

(Expression 78)

$$\alpha gd = Cgd / Ctot$$

(Expression 79)

$$\alpha st = Cst / Ctot$$

71. A display device comprising a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection of the source wiring and the gate wiring; a pixel electrode connected with the thin-film-transistor; a storage capacitance electrode forming a storage capacitance with the pixel electrode; an opposite electrode formed to oppose the pixel electrode on the same substrate or on an other substrate; a gate drive circuit supplying a gate pulse to the gate wiring sequentially; and a source drive circuit

supplying a source signal to the source wiring, on the opposing surface of one substrate among two substrates that are opposed each other,

wherein the storage capacitance decreases according to the distance from the feeding edge of the gate signal and the thin-film-transistor becomes small according to the

5 decrease of the storage capacitance.

72. A display device comprising a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection of the source wiring and the gate wiring; a pixel electrode connected with the TFT; a storage capacitance electrode

10 forming a storage capacitance between the pixel electrode; an opposite electrode formed as opposing the pixel electrode on the same substrate or on an other substrate; a gate drive circuit supplying a gate pulse to the gate wiring sequentially; and a source drive circuit supplying a source signal to the source wiring, on the opposing surface of one substrate among two substrates which are opposed to each other,

15 wherein the thin-film-transistor is composed of a gate electrode connected with the gate wiring, a source electrode connected with the source wiring and a drain electrode connected with the pixel electrode, and the source electrode and the drain electrode are separated by channel-length L with width W, and the storage capacitance electrode become small according to the distance from the feeding edge of the gate signal, and

20 the width W of the channel of the drain electrode of the thin-film-transistor is reduced according to the decrease of the area of the storage capacitance electrode, and the electrostatic capacitance formed by overlapping of the gate and the drain becomes constant.

73. A display device comprising a source wiring and a gate wiring arranged in a matrix; a

25 thin-film-transistor installed corresponding to each intersection of the source wiring and the gate wiring; a pixel electrode connected with the TFT; a storage capacitance electrode forming a storage capacitance with the pixel electrode; an opposite electrode formed as opposing the pixel electrode on the same substrate or on an other substrate,

wherein the thin-film-transistor is composed of a gate electrode connected with the

30 gate wiring, a source electrode connected with the source wiring and a drain electrode connected with the pixel electrode, and the source electrode and the drain electrode are opposed separated by channel-length L with width W, and the storage capacitance electrode becomes small according to the distance from the feeding edge of the gate signal,

wherein the electrostatic capacitance between the gate electrode and the drain

35 electrode becomes large according to the decrease in the storage capacitance.

74. The display device according to any one of claim 65 to 73, further comprising a second

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switching element, wherein the pixel electrode combines a gate electrode of the second switching element or the pixel electrode is connected with a gate electrode of the second switching element.

5   75. A method for driving a display apparatus which comprises plural pixel electrodes arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode, and an opposite electrode forming a capacitance with the pixel electrode, which apparatus further comprises

a storage capacitance between the pixel electrode and the scanning electrode other
10   than the scanning electrode of the present line;

more than two capacitance elements connected with the pixel electrode, including at least one of a gate-drain inter-electrode capacitance of the switching element and the storage capacitance, having a different value according to the distance from the power feeding edge of the scanning electrode;

15   wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst, a first capacitance ratio α gd shown by (Expression 80) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode,

20   wherein the method applies the voltage to the pixel electrode via the storage capacitance after applying the voltage via the switching element.

(Expression 80)

$\alpha\, gd = Cgd \diagup Ctot$

25   76. A method for driving a display apparatus which comprises plural pixel electrodes arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode forming a capacitance with the pixel electrode, a storage capacitance electrode, which apparatus further comprises

a first storage capacitance between the pixel electrode and the scanning electrode
30   other than the scanning electrode of the present line;

a second storage capacitance between the pixel electrode and the storage capacitance electrode,

wherein the method applies the voltage to the pixel electrode via the storage capacitance after applying the voltage via the switching element.

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77. The method for driving a display apparatus according to claim 76, wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain

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inter-electrode capacitance of the switching element is denoted as Cgd, the first storage capacitance is denoted as Cst1, a second storage capacitance is denoted as Cst2,

the third capacitance ratio α gd1 shown by (Expression 81) increases continuously or in stages according to the distance from the power feeding edge of the scanning electrode.

5 (Expression 81)

α gd1 = Cgd ⁄ Ctot

78. A method for driving a display apparatus which comprises plural pixel electrodes arranged in a matrix, a switching element connected with the pixel electrode, a scanning
10 electrode, a picture signal electrode, an opposite electrode, which apparatus further comprises,

a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

wherein, there are plural scanning electrodes connected with one edge of the
15 storage capacitances whose other edges are connected with the pixel electrode of plural pixels belonging to one of the scanning electrodes;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,
20 both the first capacitance ratio α gd shown by (Expression 82) and the second capacitance ratio α st shown by (Expression 83) are the different value according to the scanning electrode to which the storage capacitance is connected.

wherein the method applies the voltage to the pixel electrode via the storage capacitance after applying the voltage via the switching element.

25 (Expression 82)

α gd = Cgd ⁄ Ctot

(Expression 83)

α st = Cst ⁄ Ctot

30 79. A method for driving a display apparatus which comprises plural pixel electrodes arranged in a matrix, a switching element connected with a pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, which apparatus further comprises,

a storage capacitance between the pixel electrode and the scanning electrode other
35 than the scanning electrode of the present line;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is

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denoted as Cgd, the storage capacitance is denoted as Cst,

the second capacitance ratio $\alpha st = Cst / Ctot$ shown by (Expression 84) varies according to the distance from the display edge of the scanning electrode

wherein the method applies the voltage to the pixel electrode via the storage capacitance after applying the voltage via the switching element.

(Expression 84)

$\alpha st = Cst / Ctot$

80. A method for driving a display apparatus which comprises a pixel electrode arranged in a matrix, a switching element connected with the pixel electrode, a scanning electrode, a picture signal electrode, an opposite electrode, which apparatus further comprises,

a storage capacitance between the pixel electrode and the scanning electrode other than the scanning electrode of the present line;

wherein, there are plural scanning electrodes connected with one edge of the storage capacitances whose other edges are connected with the pixel electrode of plural pixels belonging to one of the scanning electrodes;

wherein, when all capacitance connected with the pixel electrode in a pixel is denoted as Ctot, the gate-drain inter-electrode capacitance of the switching element is denoted as Cgd, the storage capacitance is denoted as Cst,

both the first capacitance ratio αgd shown by (Expression 85) and the second capacitance ratio αst shown by (Expression 86) have a different value according to the scanning electrode to which the storage capacitance is connected, and are varied according to the difference from display edge of the scanning electrode,

wherein the method applies the voltage to the pixel electrode via the storage capacitance after applying the voltage via the switching element.

(Expression 85)

$\alpha gd = Cgd / Ctot$

(Expression 86)

$\alpha st = Cst / Ctot$

81. A method for driving a display apparatus which comprises a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection of the source wiring and the gate wiring; a pixel electrode connected with the thin-film-transistor; a storage capacitance electrode forming a storage capacitance with the pixel electrode; an opposite electrode formed to oppose the pixel electrode on the same substrate or on an other substrate; a gate drive circuit supplying a gate pulse to the gate wiring sequentially; and a source drive circuit supplying a source signal to the source wiring, on the

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opposing surface of one substrate among two substrates which are opposed each other, wherein the storage capacitance decreases according to the distance from the feeding edge of the gate signal and the thin-film-transistor become small according to the decrease of the storage capacitance,

5   wherein the method applies the gate pulse to more than two gate wirings at the same time.

82. A method for driving a display apparatus which comprises a source wiring and a gate wiring arranged in a matrix; a thin-film-transistor installed corresponding to each intersection

10   of the source wiring and the gate wiring; a pixel electrode connected with the TFT; a storage capacitance electrode forming a storage capacitance between the pixel electrode; an opposite electrode formed to oppose the pixel electrode on the same substrate or on an other substrate; a gate drive circuit supplying a gate pulse to the gate wiring sequentially; and a source drive circuit supplying a source signal to the source wiring, on the opposing surface of one

15   substrate among two substrates which are opposed each other, wherein the thin-film-transistor is composed of a gate electrode connected with the gate wiring, a source electrode connected with the source wiring and a drain electrode connected with the pixel electrode, and the source electrode and the drain electrode are separated by channel-length L with width W, and the storage capacitance electrode becomes small according to the distance from the

20   feeding edge of the gate signal, and the width W of the channel of the drain electrode of the thin-film-transistor is reduced according to the decrease of the area of the storage capacitance electrode, and the electrostatic capacitance formed by overlapping of the gate and the drain becomes constant,

        wherein the method applies the gate pulse to more than two gate wirings at the

25   same time.

83. The method for driving a display apparatus according to any one of claim 75 to 82, which display apparatus further comprises a second switching element wherein the pixel electrode combines a gate electrode of the second switching element or the pixel electrode is connected

30   with a gate electrode of the second switching element.